IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Cancelled)

2. (Cancelled)

3. (Currently Amended) A method for transmitting data from a radio network subsystem over a radio link to user equipment in a mobile telephone system, the method comprising:

the radio network subsystem transmitting a dedicated physical channel to the user equipment, which dedicated physical channel includes a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed by frames to be transmitted to the radio link;

during transmission, the radio network subsystem spreading each channel with a spreading code, the spreading factor of that spreading code determining the data transmission rate, a spreading code to be used in normal situations being reserved for the radio link; and

in a special situation, spreading at least one frame of the dedicated physical data channel with a shared spreading code, which shared spreading code being shorter than the spreading code used in normal situations,

wherein the shared spreading code is shared by time division between the dedicated physical data channels of at least two different radio links ~~A method as claimed in claim 1, characterized in that~~ and, wherein, in special situations, the user equipment ~~(UE)~~ functions in slotted mode, in which the user equipment ~~(UE)~~ measures the received power of other frequencies of adjacent base transceiver stations ~~(B)~~ for part of the duration of the frame transmitted normally by the radio network subsystem ~~(RNS)~~, and during the rest of the duration of the frame, the radio network subsystem ~~(RNS)~~ transmits a shortened frame using a shared spreading code to spread the shortened frame ~~it~~.

4. (Currently Amended) A method for transmitting data from a radio network subsystem over a radio link to user equipment in a mobile telephone system, the method comprising:

the radio network subsystem transmitting a dedicated physical channel to the user equipment, which dedicated physical channel includes a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed by frames to be transmitted to the radio link;

during transmission, the radio network subsystem spreading each channel with a spreading code, the spreading factor of that spreading code determining the data transmission rate, a spreading code to be used in normal situations being reserved for the radio link; and

in a special situation, spreading at least one frame of the dedicated physical data channel with a shared spreading code, which shared spreading code being shorter than the spreading code used in normal situations,

wherein the shared spreading code is shared by time division between the dedicated physical data channels of at least two different radio links, ~~A method as claimed in claim 1, characterized in that~~ and, wherein, when the frames of different radio links ~~(Uu)~~ are not synchronized with each other, each radio link ~~(Uu)~~ receives a shared spreading code for use for a time period which is twice the length of the frame to be transmitted to the radio link ~~(Uu)~~.

5.- 9. (Cancelled)

10. (Currently Amended) A method for transmitting data from a radio network subsystem over a radio link to user equipment in a mobile telephone system, the method comprising:

the radio network subsystem transmitting a dedicated physical channel to the user equipment, which dedicated physical channel includes a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed by frames to be transmitted to the radio link;

during transmission, the radio network subsystem spreading each channel with a spreading code, the spreading factor of that spreading code determining the data transmission rate, a spreading code to be used in normal situations being reserved for the radio link; and

in a special situation, spreading at least one frame of the dedicated physical data channel with a shared spreading code, which shared spreading code being shorter than the spreading code used in normal situations,

wherein the shared spreading code is shared by time division between the dedicated physical data channels of at least two different radio links, wherein the dedicated physical control channel includes a transport format indicator which indicates the spreading code used to spread the dedicated physical data channel, and ~~A method as claimed in claim 9, characterized in that~~ the transport format indicator in the received physical frame indicates the spreading code used to spread the dedicated physical data channel in the received frame.

11. (Currently Amended) A method for transmitting data from a radio network subsystem over a radio link to user equipment in a mobile telephone system, the method comprising:

the radio network subsystem transmitting a dedicated physical channel to the user equipment, which dedicated physical channel includes a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed by frames to be transmitted to the radio link;

during transmission, the radio network subsystem spreading each channel with a spreading code, the spreading factor of that spreading code determining the data transmission rate, a spreading code to be used in normal situations being reserved for the radio link; and

in a special situation, spreading at least one frame of the dedicated physical data channel with a shared spreading code, which shared spreading code being shorter than the spreading code used in normal situations,

wherein the shared spreading code is shared by time division between the dedicated physical data channels of at least two different radio links, wherein the dedicated physical control channel includes a transport format indicator which indicates the spreading code used to spread the dedicated physical data channel, and ~~A method as claimed in claim 9, characterized in that~~ the transport format indicator in the physical frame preceding the received physical frame indicates the spreading code used to spread the dedicated physical data channel in the received frame.

12. (Currently Amended) A method for transmitting data from a radio network subsystem over a radio link to user equipment in a mobile telephone system, the method comprising:

the radio network subsystem transmitting a dedicated physical channel to the user equipment, which dedicated physical channel includes a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed by frames to be transmitted to the radio link;

during transmission, the radio network subsystem spreading each channel with a spreading code, the spreading factor of that spreading code determining the data transmission rate, a spreading code to be used in normal situations being reserved for the radio link; and

in a special situation, spreading at least one frame of the dedicated physical data channel with a shared spreading code, which shared spreading code being shorter than the spreading code used in normal situations,

wherein the shared spreading code is shared by time division between the dedicated physical data channels of at least two different radio links, ~~A method as claimed in claim 1, characterized in that~~ and, wherein the spreading codes are arranged into a code tree in such a manner that the first level of the code tree root comprises a one-bit spreading code, the second level comprises two branches with mutually orthogonal two-bit spreading codes, the third level comprises four branches with mutually orthogonal four-bit spreading codes, the fourth level comprises eight branches with mutually orthogonal eight-bit spreading codes, the fifth level comprises sixteen branches with mutually orthogonal sixteen-bit spreading codes, the sixth level comprises thirty two branches with mutually orthogonal thirty-two-bit spreading codes, the seventh level comprises sixty four branches with mutually orthogonal sixty-four-bit spreading codes, the ~~eight~~ eighth level comprises one hundred and twenty eight branches with mutually orthogonal 128-bit spreading codes, the ninth level comprises two hundred and fifty six branches with mutually orthogonal 256-bit spreading codes, and an unambiguous method to refer to a spreading code has been agreed on by the radio network subsystem ~~(RNS)~~ and the user equipment ~~(UE)~~.

13. (Currently Amended) ~~A method as claimed in~~ The method of claim 12, wherein the transmission rate is altered by changing the length of the spreading code used to spread a frame[[, i.e.]] by moving from one level to another in the code tree.

14. (Currently Amended) ~~A method as claimed in~~ The method of claim 12, ~~characterized in that~~ wherein the spreading code reserved for the radio link ~~(Uu)~~ to be used in normal situations and the shared spreading code to be used in special situations reside on different levels and in different branches of the code tree.

15-17. (Cancelled)

18. (Currently Amended) A radio network subsystem which is adapted to:

transmit a dedicated physical channel over a radio link to user equipment, the dedicated physical channel including a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be transmitted to the radio link;

spread each channel with a spreading code during transmission, the spreading factor of the spreading code determining the data transmission rate, a spreading code to be used in normal situations for the radio link being reserved; and

spread, in a special situation, at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations, and to share the shared spreading code in question by time division between the dedicated physical data channels of at least two different radio links,

wherein~~A radio network subsystem as claimed in claim 16, characterized in that~~ in special situations, the user equipment ~~(UE)~~ functions in slotted mode, in which the user equipment ~~(UE)~~ measures the received power of other frequencies of adjacent base transceiver stations ~~(B)~~ for part of the duration of the frame transmitted normally by the radio network subsystem ~~(RNS)~~, and during the rest of the duration of the frame, the radio network subsystem ~~(RNS)~~ is adapted to transmit a shortened frame using a shared spreading code to spread the shortened frame ~~it~~.

19. (Currently Amended) A radio network subsystem which is adapted to:

transmit a dedicated physical channel over a radio link to user equipment, the dedicated physical channel including a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be transmitted to the radio link;

spread each channel with a spreading code during transmission, the spreading factor of the spreading code determining the data transmission rate, a spreading code to be used in normal situations for the radio link being reserved; and

spread, in a special situation, at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations, and to share the shared spreading code in question by time division between the dedicated physical data channels of at least two different radio links,

wherein~~A radio network subsystem as claimed in claim 16, characterized in that~~ when the frames of different radio links ~~(Uu)~~ are not synchronized with each other, the radio network subsystem ~~(RNS)~~ is adapted to provide each radio link ~~(Uu)~~ with a shared spreading code for use for a time period which is twice the length of the frame to be transmitted to the radio link ~~(Uu)~~.

20.-24. (Cancelled)

25. (Currently Amended) ~~A radio network subsystem as claimed in claim 24, characterized in that the radio network subsystem (RNS) is adapted to~~ A radio network subsystem which is adapted to:

transmit a dedicated physical channel over a radio link to user equipment, the dedicated physical channel including a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be transmitted to the radio link;

spread each channel with a spreading code during transmission, the spreading factor of the spreading code determining the data transmission rate, a spreading code to be used in normal situations for the radio link being reserved;

spread, in a special situation, at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations, and to share the shared spreading code in question by time division between the dedicated physical data channels of at least two different radio links;

place into the dedicated physical control channel a transport format indicator which indicates the spreading code used to spread the dedicated physical data channel; and

place into the transport format indicator of the physical frame to be transmitted the identification data of the spreading code used to spread the dedicated physical data channel in the frame to be transmitted.

26. (Currently Amended) ~~A radio network subsystem as claimed in claim 24, characterized in that the radio network subsystem (RNS) is adapted to~~ A radio network subsystem which is adapted to:

transmit a dedicated physical channel over a radio link to user equipment, the dedicated physical channel including a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be transmitted to the radio link;

spread each channel with a spreading code during transmission, the spreading factor of the spreading code determining the data transmission rate, a spreading code to be used in normal situations for the radio link being reserved;

spread, in a special situation, at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations, and to share the shared spreading code in question by time division between the dedicated physical data channels of at least two different radio links;

place into the dedicated physical control channel a transport format indicator which indicates the spreading code used to spread the dedicated physical data channel; and

place into the transport format indicator of the physical frame preceding the physical frame to be transmitted the identification data of the spreading code used to spread the dedicated physical data channel in the frame to be transmitted.

27. (Currently Amended) A radio network subsystem which is adapted to:

transmit a dedicated physical channel over a radio link to user equipment, the dedicated physical channel including a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be transmitted to the radio link;

spread each channel with a spreading code during transmission, the spreading factor of the spreading code determining the data transmission rate, a spreading code to be used in normal situations for the radio link being reserved; and

spread, in a special situation, at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations, and to share the shared spreading code in question by time division between the dedicated physical data channels of at least two different radio links,

wherein~~A radio network subsystem as claimed in claim 16, characterized in that~~ the spreading codes are arranged into a code tree in such a manner that the first level of the code tree root comprises a one- bit spreading code, the second level comprises two branches with mutually orthogonal two-bit spreading codes, the third level comprises four branches with mutually orthogonal four-bit spreading codes, the fourth level comprises eight branches with mutually orthogonal eight-bit spreading codes, the fifth level comprises sixteen branches with mutually orthogonal sixteen-bit spreading codes, the sixth level comprises thirty two branches with mutually orthogonal thirty-two-bit spreading codes, the seventh level comprises sixty four branches with mutually orthogonal sixty-four-bit spreading codes, the ~~eight~~ eighth level comprises one hundred and twenty eight branches with mutually orthogonal 128-bit spreading codes, the ninth level comprises two hundred and fifty six branches with mutually orthogonal 256-bit spreading codes, and an unambiguous method to refer to a spreading code has been agreed on by the radio network subsystem ~~(RNS)~~ and the user equipment ~~(UE)~~.

28. (Currently Amended) The [[A]] radio network subsystem ~~as claimed in~~ of claim 27, ~~characterized in that~~ wherein the radio network subsystem ~~(RNS)~~ is adapted to alter the transmission rate by changing the length of the spreading code used to spread a frame~~, i.e.~~ by moving from one level to another in the code tree.

29. (Currently Amended) The [[A]] radio network subsystem ~~as claimed in~~ of claim 27, ~~characterized in that~~ wherein the radio network subsystem ~~(RNS)~~ is adapted to reserve for the radio link ~~(Uu)~~ from different levels and branches of the code tree a spreading code for use in normal situations and a shared spreading code for special situations.

30. (Cancelled) A radio network subsystem as claimed in claim 16, characterized in that in a soft handover, the radio network subsystem ~~(RNS)~~ is adapted to transmit a dedicated physical data channel to the user equipment ~~(UE)~~ through at least two different base transceiver stations ~~(8)~~ using a shared spreading code of equal length for spreading so

that the user equipment ~~(UE)~~ receives the transmissions in question substantially at the same moment.

31.-32. (Cancelled)

33. (Currently Amended) ~~User equipment as claimed in claim 31, characterized in that in special situations the user equipment (UE) is adapted to~~ User equipment which is adapted to:

receive a dedicated physical channel transmitted by the radio network subsystem over a radio link, which dedicated physical channel includes a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be received from the radio link;

remove during reception the spreading of each channel with a spreading code, the spreading factor of the spreading code determining the data transmission rate, and, in normal situations, the spreading code reserved for the radio link being used remove the spreading,

in special situations, remove the spreading of at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations and which is used by time division between the dedicated physical data channels of at least two different radio links; and

function in slotted mode, in which the user equipment ~~(UE)~~ measures the received power of other frequencies of adjacent base transceiver stations ~~(B)~~ for part of the duration of the frame transmitted normally by the radio network subsystem ~~(RNS)~~, and during the rest of the duration of the frame, the user equipment ~~(UE)~~ is adapted to receive a shortened frame transmitted by the radio network subsystem ~~(RNS)~~, and to use the shared spreading code to remove the spreading of the shortened frame in question.

34. (Currently Amended) ~~User equipment as claimed in claim 31, characterized in that~~ User equipment which is adapted to:

receive a dedicated physical channel transmitted by the radio network subsystem over a radio link, which dedicated physical channel includes a dedicated physical control channel

and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be received from the radio link;

remove during reception the spreading of each channel with a spreading code, the spreading factor of the spreading code determining the data transmission rate, and, in normal situations, the spreading code reserved for the radio link being used remove the spreading, and

in special situations, remove the spreading of at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations and which is used by time division between the dedicated physical data channels of at least two different radio links,

wherein when the frames of different radio links ~~(Uu)~~ are not synchronized with each other, the user equipment ~~(UE)~~ is adapted to receive a shared spreading code for use for a time period which is twice the length of the frame to be received from the radio link ~~(Uu)~~.

35.-39. (Cancelled)

40. (Currently Amended) ~~User equipment as claimed in claim 39, characterized in that the user equipment (UE) is adapted to~~ User equipment which is adapted to:

receive a dedicated physical channel transmitted by the radio network subsystem over a radio link, which dedicated physical channel includes a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be received from the radio link;

remove during reception the spreading of each channel with a spreading code, the spreading factor of the spreading code determining the data transmission rate, and, in normal situations, the spreading code reserved for the radio link being used remove the spreading,

in special situations, remove the spreading of at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations and which is used by time division between the dedicated physical data channels of at least two different radio links;

read the spreading code used to spread the dedicated physical data channel from the transport format indicator in the dedicated physical control channel; and

read the identification data of the spreading code used to spread the dedicated physical data channel in the received frame from the transport format indicator in the received physical frame.

41. (Currently Amended) ~~User equipment as claimed in claim 39, characterized in that the user equipment (UE) is adapted to~~ User equipment which is adapted to:

receive a dedicated physical channel transmitted by the radio network subsystem over a radio link, which dedicated physical channel includes a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be received from the radio link;

remove during reception the spreading of each channel with a spreading code, the spreading factor of the spreading code determining the data transmission rate, and, in normal situations, the spreading code reserved for the radio link being used remove the spreading,

in special situations, remove the spreading of at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations and which is used by time division between the dedicated physical data channels of at least two different radio links;

read the spreading code used to spread the dedicated physical data channel from the transport format indicator in the dedicated physical control channel; and

read the identification data of the spreading code used to spread the dedicated physical data channel in the received frame from the transport format indicator in the physical frame preceding the received physical frame.

42. (Currently Amended) ~~User equipment as claimed in claim 31, characterized in that~~ User equipment which is adapted to:

receive a dedicated physical channel transmitted by the radio network subsystem over a radio link, which dedicated physical channel includes a dedicated physical control channel and a dedicated physical data channel, the dedicated physical channel being formed from the frames to be received from the radio link;

remove during reception the spreading of each channel with a spreading code, the spreading factor of the spreading code determining the data transmission rate, and, in normal situations, the spreading code reserved for the radio link being used remove the spreading, and

in special situations, remove the spreading of at least one frame of the dedicated physical data channel with a shared spreading code which is shorter than the spreading code used in normal situations and which is used by time division between the dedicated physical data channels of at least two different radio links,

wherein the spreading codes are arranged into a code tree-in such a manner that the first level of the code tree root comprises a one-bit spreading code, the second level comprises two branches with mutually orthogonal two-bit spreading codes, the third level comprises four branches with mutually orthogonal four-bit spreading codes, the fourth level comprises eight branches with mutually orthogonal eight-bit spreading codes, the fifth level comprises sixteen branches with mutually orthogonal sixteen-bit spreading codes, the sixth level comprises thirty two branches with mutually orthogonal thirty-two-bit spreading codes, the seventh level comprises sixty four branches with mutually orthogonal sixty-four-bit spreading codes, the ~~eight~~ eighth level comprises one hundred and twenty eight branches with mutually orthogonal 128-bit spreading codes, the ninth level comprises two hundred and fifty six branches with mutually orthogonal 256-bit spreading codes, and an unambiguous method to refer to a spreading code has been agreed on by the radio network subsystem ~~(RNS)~~ and the user equipment ~~(UE)~~.

43. (Cancelled)